

Zero Retries issue 0183 2024-12-20

Zero Retries is an independent newsletter promoting technological innovation that is occurring in Amateur Radio, and Amateur Radio as (literally) a license to experiment with and learn about radio technology. Radios are computers - with antennas! Now in its fourth year of publication, with 2300+ subscribers.

About Zero Retries

Steve Stroh N8GNJ, Editor

Jack Stroh, Late Night Assistant Editor Emeritus

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Web version of this issue - <https://www.zeroretries.org/p/zero-retries-0183>

Paying it Forward in Amateur Radio

By Steve Stroh N8GNJ

A fiction story Christmas present for Zero Retries Readers.



Image from ChatGPT

There was a light, hesitant knock on the door of Jennifer's apartment. She answered the door and looked at a young woman about 15 years old. "Hi - you must be Jada! I've been looking forward to meeting you - please come in."

Jada looked up at Jennifer who was smiling at her. Jennifer ushered her in and offered to take her coat, and gestured to sit down on the couch. "You have a nice apartment" Jada said. "Thanks! I like it. I chose it because it has a special feature that we'll talk about in a little while."

Jennifer continued "I was about to make myself some hot tea. Would you like some tea, or hot chocolate? It's cold outside tonight." Jada said "Thanks! I'd like hot chocolate." and with that Jennifer gestured Jada into the apartment's small kitchen.

Jada sat down at the small table while Jennifer got out the water kettle for tea and began warming some milk for Jada's hot chocolate on the stove. Jada said "So... how did you meet my Mom again? She kind of pushed me to come visit you here in your apartment. You must have impressed her because it's a school night and kind of nasty outside and she doesn't really like to drive at night in this kind of weather."

Jennifer chuckled and brought the mugs of tea and hot chocolate to the table, and sat down across from Jada. "Your Mom saw me in a Phoenix Coffee about three miles from here. You can actually see my apartment building from there, which is why I chose to get coffee there."

I was testing out a new walkie talkie that I just bought to see if I could use it to connect to one of my radios here in the apartment. Your mom saw me

working on my laptop with the walkie talkie on the table. I was having a little trouble getting the walkie talkie to connect to my laptop but eventually I got it working. Your Mom walked over and asked me what I was doing, and I explained to her that I was trying to get the laptop to talk to another computer in my apartment, via the walkie talkie. She thought that it was interesting and cool that I was a techie woman, and she was curious about the walkie talkie. I explained to her a little bit about what I was doing, and that I was an Amateur Radio Operator. She sat down and began telling me about you, Jada, and how she's been encouraging you to get more interested in technology for a career. She thought you might enjoy talking about tech to me, and maybe you'd be interested in the radio and computer stuff that I'm doing here in my apartment, and at the coffee shop. It's called "Amateur Radio" but people usually know it better by the name "Ham Radio."

Jada replied "I saw an old TV show a long time ago with an old guy sitting in front of a bunch of radio things talking into a microphone. Is that "Ham Radio? Why do they call it that?" Jennifer replied warmly "Well, that's *one* thing you can do with Amateur Radio, and that was pretty common not too long ago. But these days, Amateur Radio has lots of *different* things you can do, and there are a lot of us *women* involved in it. A lot of techies like me get involved in Amateur Radio because we can do a lot of cool stuff with radios. Mostly what *I* do is let my computers communicate over the radio, and instead of a microphone, I use a keyboard and screen. I actually learned a lot from my playing around with Amateur Radio that helped me get my current job. And, no one really knows why Amateur Radio got the name Ham Radio; there are lots of stories about *how* that name came up. Most of us think that *Ham Radio*" just kind of stuck in folk's minds more than *Amateur Radio*".

Jada said "What's your job?" Jennifer replied "I work at Acme Robotic Systems here in Cleveland. I'm an Electrical Engineer and I write software for radios that are built into every Acme robot. So not only do I have to know about radios, I have to know all about the robots so that my *radio* software works with the *robot* software. I had to learn a lot about electronics and programming in college, but they didn't teach much about radio technology - most of that I had to learn on my own. Playing around with Amateur Radio in college really helped me to really understand the *weirdness* of radio technology. At Acme, I helped design the robot's radio hardware, and especially how to make it robust enough to deal with all the things that the robots are programmed to do."

Jennifer could see that Jada was starting to lose her shyness and reserve once they began talking about robots. "Why does a *robot* need a *radio*? They can't *talk*... can they? That would be scary!" Jennifer laughed - "No, my company's robots don't talk... well, at least they don't talk the way you and I are talking. The radios built into the robots that I work with are *data* radios, like computers communicating back and forth. Acme's robots use their radios in a bunch of different ways. One of the most useful uses for the robot's radios is that we make some simple and pretty cheap robots that you can use for simple things like picking stuff out of a box and putting it into place to be welded. *Those* robots come with a wireless control panel that makes it easy for a person to program them, and the control panel has a radio that can talk to the radio in the robot. And the robots can communicate between themselves using their radios to coordinate their actions if two robots are working together, like assembling a bunch of pieces of metal to be welded together. The robots can "talk" to each other about what their arms are doing every 1/10th second so the arms don't run into each other. And the robots can phone home to the factory maintenance office to say that, for example, they're running low on hydraulic fluid, or they're stuck on something, or just that everything is working fine. We used to do all of that with wires, but it turned out that it works a lot better, and it's more reliable, to use *radios* instead of *wires* for the robots to communicate."

Jada looked around at the apartment and said "You must make a lot of money to afford this downtown apartment. How high up are we?" Jennifer gestured towards the glass wall at one end of the apartment and said "Let me show you the view." They walked over to the sliding glass door that led to a small patio. "We're on the 30th floor, and yeah, it's a bit expensive, but my job pays pretty well, and I'm single with no kids so I can afford it. I like the view of the city from my balcony, and like I said, there's a special feature about living here." Jada said "What's the special feature?" Jennifer said "See those antennas on the balcony? Those are for using Amateur Radio. Because I'm on the 30th floor, and from my balcony I can look Southwest, South, and Southeast to most of metro Cleveland, my radios can connect with lots of other Amateur Radio Operators in the area. I can even communicate around the world, right here from these little antennas on my balcony."

Jada said "Where are these radios that you're talking about?" Jennifer took her around the corner from the living room into a small bedroom that Jennifer had set up as a home office. Bookcases, a desk with a big computer display, and a small electronics workbench took up one wall. The opposite wall had a bigger desk with four computer monitors along the top, several keyboards, and lots of electronic units that Jada had never seen before.

"Wow!" Jada said, "This looks like what you see at NASA in those documentaries that Mom likes to watch. What does all this stuff *do*?"

Jennifer chuckled again. "It would take a long time to explain all of it, so let me just explain a few things *I* like to do with *my* radios." She pointed to one black box with just a few blinking indicators on it and said "This is the radio I was trying to connect to when I met your Mom. I can go back to Phoenix Coffee, which is my favorite, and connect to this radio from there and do a lot of my Amateur Radio stuff right from my laptop at Phoenix coffee. It ought to work in a lot of different places now that I've got the new walkie talkie working and communicating."

Jada said impatiently "OK... but what do you *do* from your laptop? Or here?" Jennifer pointed to one screen with a flat view of the world and lots of colored lines running to various other parts of the world from Cleveland. "One of the first things I like to do in the morning is look at that display to see where one of my radios has been heard around the world. For example, last night a station in Brisbane, Australia heard my radio's signal. And also in Japan, in Germany, in India, and even on a ship in the middle of the Atlantic." She pointed to a line that ended in the middle of the Atlantic Ocean with a few letters underneath the end of the line and moved the cursor to that part of the screen and a little square of text popped up. "Yep - that *contact* is a container ship with an Amateur Radio Operator that's a member of the crew. That person is allowed to use their Amateur Radio gear on the ship. Apparently the ship has good Internet access to report back that their station received one of my WSPR beacons."

Seeing the puzzled look on Jada's face, Jennifer said "I learned about WSPR from a YouTube video and thought it was pretty cool and decided to try it, and now I'm hooked. W-S-P-R stands for Weak Signal Propagation Reporter. Basically, one of my radios for the High Frequency, or *Shortwave* bands, transmits a special signal that can be heard all over the world, even though I'm using a small antenna on my balcony and transmitting really low power. *All* my radios operate at low power for safety, for me, and for all the other people in this apartment complex. If I wanted to transmit at high power I'd need to put the antennas on the roof, or on a tower, away from people. That special signal allows even my low power signal, from a small antenna on an apartment balcony here in Cleveland to be received in far away places. It always surprises me how far my radio can be heard."

Jennifer continued "Twenty years ago, most Amateur Radio Operators couldn't do something like WSPR because it depends on a pretty powerful computer. Twenty years ago, a computer like that would have cost like \$10,000, but that kind of computer power is cheap these days." She pointed to a small box on one corner of the desk - "The computer part of this radio is called a Raspberry Pi 6 and it does what's called Digital Signal Processing. It does a *lot* of math for the WSPR signal that I transmit. My radio is also a WSPR *receiver* when I'm not transmitting, so if I hear a signal from somewhere overseas right here in Cleveland, I can report back to that station that I heard them on WSPR in Cleveland, Ohio, USA. Using software similar to WSPR, Amateur Radio Operators can communicate all over the Earth, with low power, with small antennas. We use a web site as a central display of who heard who, and where to where... but the radios themselves don't need Internet, or satellite, or cellular network to communicate between themselves. Just as easily I can send an email to an Amateur Radio friend overseas and my radio will eventually send it when it can connect with my friend's radio... or relay through someone else's radio that both of us can connect to. We can even communicate via Amateur Radio satellites - there are dozens in orbit right now."

There are actually two Amateur Radio stations on the International Space Station. Some of us even bounce our radio signals off the moon... but that requires a bit more specialized equipment... and higher power... than what I can handle here in my apartment and balcony. But if I get a house, I'd like to try it."

Jada pointed to the lighted sign on the radio desk with the letters AB8HL lit up in blue. "What's that?" she asked. Jennifer replied "*That* is my Amateur Radio *callsign*. That particular set of letters and the number is unique in the whole world - I'm the only one allowed to use "AB8HL" on Amateur Radio frequencies. "Jada said "What does it *mean*?" Jennifer replied "It's geeky, but I wanted to honor a very smart lady that I learned about named Hedy Lamarr, so that's the "HL" part. The 8 is part of the callsign because I got my Amateur Radio license here in Ohio, and anyone who gets their initial Amateur Radio license in Ohio, Michigan, or West Virginia gets the 8 in the middle of their callsign. The AB is because I wanted the "HL" and the first callsign I could get for "HL" started with "AB", so... AB... 8... Hedy... Lamarr."

Jennifer continued "Hedy was a really smart woman, and around the time of World War 2, she co-invented an important part of radio technology called Frequency Hopping Spread Spectrum. Hedy didn't get paid much attention for inventing it because she was a *woman*, and a movie star. I wanted to honor her memory just a little bit because even now it's hard to be a techie who's a woman."

Jada pointed to another screen on the desk that had a map of the Cleveland area and said "What's that one?" Jennifer replied "That's our Amateur Radio *microwave* network here in the Cleveland area. It's kind of like our private Internet, only instead of wires, we connect to each other using radios operating in the microwave portion of the radio spectrum. Basically that means that the data rates of that network are pretty fast, and we can do pretty much everything you do on the Internet - voice, video, connect to other folks Amateur Radio stations (with their permission), send email, surf websites that are run by other Amateur Radio stations on the network."

Jada said "Wow that's cool, but..."

Jennifer smiled and said "What *good* is all this?"

Jada said "Well... yeah. I get it that *you* like playing with radios 'cause that's what you do for your job, but I can do all this stuff with my *iPhone*."

Jennifer said "True, but what's cool for *me* is that *I* understand how *all* of this stuff *works*, especially how it all works *together*. I enjoy learning all of that, and experimenting with new stuff. I might eventually get a new job doing even more interesting things sometime in the future. Learning and experimenting and understanding all of this will help me. And, it'll look really good on my resume."

Jada continued "I get it why *you* do all of this radio stuff... but what's in it for the *rest* of us?"

Jennifer replied "Let's get some more tea and hot chocolate and sit on the sofa." After they were both comfortable, she continued. "You're right that you can do a lot of what I can do with your phone. But what you don't understand is that even something very simple like texting your Mom requires hundreds of different pieces of equipment in the cellular network, all needing their own power, all connected via wires, all needing to work perfectly for your text to go through. Things go wrong a lot more often than you and most people realize. Remember the freezing rain we had last winter that took down a lot of trees that fell on power lines (and fiber lines on the same poles)? My Amateur Radio friends and I all stayed in touch with each other because *we* operate our *own* network... we know how to *fix it* when something does go wrong."

The Jennifer smiled again and said "Another way to think about what we do in Amateur Radio is that it's kind of like mountain climbing... or learning a language... or woodworking."

Jada said "OK, now I'm *really* confused. What does *radio* have to do with those other things?"

Jennifer chuckled "*What* we do, not much. *Why* we do those things, *everything*. You don't have to *climb* a mountain to get to the peak - you can have a *helicopter* take you up to the peak and drop you off if you just want to see the view from there. You don't have to *learn* a language these days - your phone can act as a realtime translator - speak English into your earbud microphone and your phone can instantly translate what you say to Japanese, or Portuguese on the phone's speaker. *Woodworkers* build things because they like learning how to *do* woodworking and making unique things. But if you want a wooden table or dresser or bookcase, you can just go to Ikea to buy a really nice one."

Jennifer continued "Amateur Radio is kind of the same way. If you just want to talk to, or text someone, or send email, your phone (usually) works great for that. But if you want to *learn* about how radios *work*, or experiment with your *own* radios like I do, you can learn about it with Amateur Radio."

Jada looked thoughtful. "OK, so if I wanted to get into Amateur Radio... are there other people to hang with... not just doing keyboard to keyboard?"

Jennifer said "Well, Amateur Radio isn't quite *all* keyboards. We can talk, and we can even do video; I do a video chat kind of like Zoom, but over the radio instead of the Internet. And meeting other people In Real Life, there are lots of Amateur Radio clubs in the Cleveland area. I have friends at the makerspace at the library." She gestured at her radio desk and continued "I found my radio desk at a surplus furniture place but it needed some repairs, needed more shelves, and I wanted to add some drawers. My makerspace friends helped me fix it up. I don't have enough room here in the apartment for my own 3D printer (and it really should vent the fumes to the outdoors), so sometimes I email the makerspace and ask them to set up a 3D print job for me on one of their 3D printers. They're happy to do that, and I just go by and pick it up on a weekend."

Jennifer continued "There's a group of us techie women that get together every few months to have lunch together on a Saturday, and some of us are also Amateur Radio Operators. There's three, oops, *four* great Amateur Radio clubs that I belong to and sometimes attend their meetings - Cuyahoga Amateur Radio Society, an Amateur Radio club at Case Western (lots of cool, smart students there), our *real techie* group that got us together to build the network I'm part of called Greater Cleveland Amateur Radio Technical Society... and there's even an Amateur Radio club at the NASA Glenn facility here in the Cleveland area. You can imagine that *those NASA folks* are pretty techie. What I'm trying to say is that is that doing Amateur Radio doesn't mean you just play with radios, keyboard and a screen. We also do things outdoors in the summer; you'd probably enjoy visiting us in one of the Metroparks on a Sunday where a bunch of us set up with radios or other projects for a few hours and hang out and have a picnic."

Jada was quiet for a bit, thinking things over. Eventually she said "How did *you* get started with all this stuff? Was someone in your family into Amateur Radio?" Jennifer chuckled "Oh no. I grew up in a small town in Northwest Ohio that didn't have much tech at all, even in our high school. They had stuff like 3D printing, programming, and a bit of robots, but nothing really about *electronics* which is what *I* had a little bit of interest in."

I didn't learn that Amateur Radio existed, let alone get interested in it, until in my senior year of high school I began thinking about college and applying for scholarships. One of the scholarships I got that helped me go to college at Ohio State was from a group called ARDC. They sponsor a bunch of scholarships for women like me that want to go into tech through a group called Society of Women Engineers. When I was looking at their website, I discovered that besides paying for scholarships, ARDC is involved in Amateur Radio. The more I read about Amateur Radio, the more I thought that it

was pretty cool! I eventually found an Amateur Radio newsletter called Zero Retries that talked about the kinds of Amateur Radio stuff *I* was really curious about. *That* kind of stuff...” as she pointed at the radio desk.

Just then, there was a ringing noise at the radio bench, and Jada noticed an old-fashioned red landline phone. “Excuse me...” Jennifer said and walked over to it and picked it up. “Hi Shelia”, she said, then listened, then continued “Yes, I’ll be there. If you have a minute, could you say Hi to a friend that’s visiting? I’m showing her my radio system. Great!” Jennifer gestured to Jada to come over and talk on the phone. “Hello? Yeah, all of this is pretty cool, and I’m enjoying talking to Jennifer. OK, thanks, and it’s a pleasure to meet you too.” Jada put the handset down on the phone.

Jennifer said “What you probably don’t know is that old landline phone is connected to one of my *radios*, and you were actually talking over the radio from that phone. I saw that red phone in an electronic surplus store and thought it was cool and wanted to use it somehow in my radio system. But here, no landlines are involved. Instead, the phone is connected to a small computer called an Asterisk server, and Shelia has the same setup. Our two telephones (and a lot of others) all connect over our Amateur Radio network, and like I was explaining earlier, none of *our* stuff *depends* on the Internet, or cellular, or satellites, or landlines. It’s just us *radio* folks... and our *radios*... on *our* network. And, another cool thing...”, she pointed at a box under the radio table with a small blue display “even if the power goes out, our network will still work because that’s a battery backup power supply and my radios will all *keep* working even if the power is out for a couple of *days*. Lots of other folks have backup power too, so the network will keep working even with the power out.”

Jennifer gestured towards the balcony “I even have a satellite antenna... actually several... out on my balcony. The square one is for a system called Starlink and that’s what I use for my radio system’s Internet (when I want to use Internet from my radio system). What’s cool about that is that as long as I can give it power, it works. With that, I can watch video when everyone else’s Internet is out (we have cable Internet in this building, which goes out fast when there’s an ice storm, or really high winds, or just about anything)... but better than that I can share my Starlink Internet via Wi-Fi to others that really need Internet but their phone doesn’t work, and their apartment Internet is out.”

Jennifer glanced at her watch and said “Wow, we’ve been talking for two hours and I bet your Mom will be coming soon pick you up. If you’re interested in Amateur Radio, we could set up another visit here, or we can meet somewhere. Before you go, is there anything else you’d like to know?”

Jada walked over the radio desk and pointed to a unit with two triangular pieces of clear plastic about an inch from each other, arranged vertically. “What’s this?” Jennifer chuckled “*That*, is my *Morse Code Key*. It’s called an iambic key; I press one side for “dits” and the other side for “dahs”. When they write about Morse Code, they usually call the two Morse Code characters “dots” and “dashes”. But in Amateur Radio we call them dits and dahs. I don’t do Morse Code a lot; *I* prefer to use computers and do data communications. But every once in a while I will use Morse Code on our High Frequency (or “Shortwave”) bands that work all over the world. Morse Code is like another language for Amateur Radio. I can communicate with another Amateur Radio Operator, like a friend in Korea. She doesn’t know much English, and I don’t know much Korean, but we both know Morse Code and so we can exchange simple messages between ourselves using Morse Code. For example, the Morse Code characters Q, T, H mean “where you live” to both of us.

Morse Code is kind of a secret language these days - the military used to use it, and big ships at sea used to be required that the ship’s electronics officer knew it, but nobody requires learning Morse Code any more. But lots of us Amateur Radio Operators know it and use it and have fun with it.”

There was a knock on the door and Jennifer said “That will be your Mom”. As she was putting on her coat, Jada said “Thank you very much Jennifer! Learning a little bit about this stuff was really cool. Can I text you if I have questions?” Jennifer said “Of course!” and gave Jada her mobile number.

Jennifer said “Would you like to go with me to lunch with the *Gadget Girls Grub Club*? It’s next Saturday and I think this next one is at a Mexican restaurant. Lunch would be my treat. I can pick you up at your apartment.” Jada smiled and said “I’ll ask Mom if it’s OK, but yes, I ‘d like that! Mexican is cool, and it sounds like fun! Mom works most Saturdays so you picking me up would work great”.

As Jennifer opened the door, Jada’s Mom, Faith, noticed the smile on Jada’s face, then looked at Jennifer and said “Thank you for taking the time with Jada. I’ll guess we’ll have a lot to talk about on the way home.” Jennifer smiled and said “It was my pleasure - Jada was a delight. Other Amateur Radio Operators did something similar for me when I was curious about it and doing this for Jada is paying it forward to someone else. I hope that Jada and I can spend more time together soon.”

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Commentary by Editor Steve Stroh N8GNJ

Paying it Forward in Amateur Radio

I wrote this fiction story as a Christmas (or Holiday, if you prefer) gift to you Zero Retries readers for indulging me in this nutty fantasy of an independent Amateur Radio newsletter with a laughably narrow niche of data communications, space communications, microwave, and generally technical topics within Amateur Radio. Without you *readers*, there wouldn’t be any point in writing Zero Retries each week.

Paying it Forward in Amateur Radio includes fictional characters, fictional products, some fictional technologies, but also some actual situations and technologies and some local flavor. It reflects a hopeful “Zero Retries” near future that I can envision after writing Zero Retries for 3+ years now and “integrating” numerous leading and bleeding edge technologies that are evolving in Amateur Radio.

Some elements of the story were modeled on my wonderful, techie, daughter Merideth KK7BKI who is one of the most kindest and smartest persons I’ve ever known. I imagined Jennifer’s mentoring of Jada would be much like what Merideth would do in such circumstances.

I wanted to place this story in an urban area and chose the Cleveland, Ohio area where my wife and I lived in the mid-1980s. Since I’m not familiar with Cleveland in the 2020s, but wanted to add some local elements to the story, I decided to try using ChatGPT for questions¹ about Cleveland, such as the name of a local coffee shop chain (Phoenix Coffee), what is the tallest apartment building in Cleveland (The Lumen at Playhouse Square, which has 34 floors), and whether there were robot manufacturers in the Cleveland area (ChatGPT said there were at least four, and named them). Thus ChatGPT saved me *hours* of web searching, and as a result I, for one, welcome our new writing research AI assistants.

As I finished the story, it really needed some kind of graphic, and I did a quick set of prompts in ChatGPT to generate the image. I’m still using the free

version of ChatGPT so I could only iterate the image about four times. Thus it's not ideal - I could have easily iterated for ten more minutes... but this image was good enough. ChatGPT proven useful *enough* in helping to do research² for Zero Retries that in 2025, I feel justified in investing in the basic paid tier of ChatGPT. *Thank you for that, paid subscribers to Zero Retries!*

Us older Amateur Radio Operators would call an experience like this between Jada and Jennifer “Elmering”. But, I’ve learned that “insider lingo” like that is *one of many subtle barriers* in getting younger folks interested in Amateur Radio. Thus I now use the much more widely embraced term *Mentoring*. In Amateur Radio we seem to have lost the tradition of mentoring... at least it's nowhere near as widespread as it used to be. I think it's critical for Amateur Radio to regain at least some more mentoring so the coolness of Amateur Radio can be explained one on one, in person, with the experience tailored to each individual prospective Amateur Radio Operator. In my story, Jada was already curious about tech, thus meeting Jennifer at her apartment where Jennifer could explain a bit about Amateur Radio from her working Amateur Radio systems would be a bit more “immersive” for Jada, and more relevant than just meeting at Phoenix Coffee.

The brief mention of Amateur Radio activities during the summer in a Cleveland Metropark was from a great article about such activity that occurs every summer in the Minneapolis, Minnesota area.

It's possible that there will be more Jada and Jennifer stories if this one is well-received. Let me know what you think.

Please Donate to DLARC

In **Zero Retries 0182** - What's New at DLARC — December 2024, Kay Savetz K6KJN said:

Greetings and happy holidays from DLARC, your free online ham radio library that is a project of the Internet Archive. Internet Archive is a non-profit library, and we're running our big end-of-year fundraiser. If you [make a donation using this special link](#), the fundraising folks will know that you're contributing with DLARC in mind. Your donation will help pay for staff and keep the petabytes of servers humming.

I was just running the numbers for the year, and was thrilled to see that through the end of November 2024, DLARC scanned 1,123,546 pages of material! That's 1.1 million pages of radio manuals, journals and magazines, newsletters, books, and catalogs. All of it is [online and full-text searchable](#). (That's only counting paper scans — we also digitized hundreds of video and audio tapes.) It's been a productive year.

A 1.1 million page archive of Amateur Radio material... from, and for, Amateur Radio *worldwide*. Amateur Radio *has never had such a resource!* All of the material in DLARC is free to access, by anyone, worldwide, online. DLARC is truly an incredible resource for Amateur Radio!

Thus if you have “end of year donation funds”, I can't think of a more worthy Zero Retries Interesting project to donate to. K6KJN doesn't mention that it's been a rough year for Internet Archive, and truly, every financial donation to IA *helps*. IA is a not-for-profit entity, so if you're able to deduct such donations from your US federal taxes, a donation to IA is eligible.

Zero Retries Brief Holiday Hiatus

As mentioned in **Zero Retries 0182** - Zero Retries Brief Holiday Hiatus, here's the upcoming Zero Retries (non) publication schedule:

- No new Zero Retries issue on 2024-12-27
- No new Zero Retries issue on 2025-01-03
- Zero Retries 0184 will publish on 2025-01-10

Have a great Christmas / Holiday break, all of you co-conspirators in Zero Retries Interesting Amateur Radio activities!

Steve N8GNJ

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Join the Fun on Amateur Radio

If you're not yet licensed as an Amateur Radio Operator, and would like to join the fun by *literally having a license to experiment with radio technology*, check out

Join the Fun on Amateur Radio for some pointers.

Zero Retries Frequently Asked Questions (FAQs) — In development 2023-02.

Closing the Channel

In its mission to highlight technological innovation in Amateur Radio, promote Amateur Radio to techies as a literal license to experiment with radio technology, and make Amateur Radio more relevant to society in the 2020s and beyond, Zero Retries is published via email and web, and is available to everyone at no cost. Zero Retries is proud *not to participate* in the Amateur Radio Publishing Industrial Complex, which hides Amateur Radio content behind paywalls.

My ongoing *Thanks* to:

- Tina Stroh KD7WSF for, well, *everything!*
- **Annual Founding Members who generously support Zero Retries financially:**

Founding Member 0000 - Steven Davidson K3FZT (Renewed 2024)

Founding Member 0001 - Randy Smith WU2S (Renewed 2024)

Founding Member 0002 - Chris Osburn KD7DVD (Renewed 2024)

Founding Member 0003 - Don Rotolo N2IRZ (Renewed 2024)

Founding Member 0004 - William Arcand W1WRA (Renewed 2024)

Founding Member 0006 - Todd Willey KQ4FID (Renewed 2024)

Founding Member 0007 - Merik Karman VK1DF / VK2MKZ (Renewed 2024 *with two Founding Member subscriptions!*)

Founding Member 0008 - Prefers to Remain Anonymous 14 (Renewed 2024)

Founding Member 0009 - Prefers to Remain Anonymous 19

Founding Member 0011 - Rick Prelinger W6XBE (New 2024)

Founding Member 0012 - Ryan Tolboom N2BP (New 2024)

- Numerous Annual and Monthly subscribers who also generously support Zero Retries financially!

Want to Support Zero Retries?

- The *most* effective way to support Zero Retries is to simply mention Zero Retries to your co-conspirators that are also interested in knowing more about technological innovation that is occurring in Amateur Radio and encourage them to become a fellow subscriber.
- One particularly effective method of promoting Zero Retries is to add a mention of Zero Retries to your [QRZ](#) page (or other web presence) and include a link:

<https://www.zeroretires.org>

- If you'd like to financially support Zero Retries, becoming a paid subscriber is *greatly* appreciated and helps offset expenses incurred in publishing Zero Retries. Paid subscriptions for Zero Retries are *entirely optional*, as explained in this special issue of ZR: Zero Retries Administrivia - Activating Payment Options.

These blogs and newsletters regularly feature Zero Retries Interesting content:

- [Dan Romanchik KB6NU](#) mentions "Zero Retries Interesting" topics so regularly on his blog (that I otherwise wouldn't know about) that I've bestowed on him the honorific of Pseudostaffer.
- [Jeff Davis KE9V](#) also mentions "Zero Retries Interesting" topics so regularly on his blog (that I otherwise wouldn't know about) that I've bestowed on him the honorific of Pseudostaffer.
- [Amateur Radio Weekly](#) by Cale Mooth K4HCK is a weekly anthology of links to interesting Amateur Radio stories that often feature "Zero Retires Interesting" topics.
- [Experimental Radio News](#) by Bennet Z. Kobb AK4AV discusses (in detail) Experimental (Part 5) licenses issued by the US FCC. It's a *must-read-now* for me!
- [RTL-SDR Blog](#) - *Excellent* coverage of Software Defined Radio units.
- [TAPR Packet Status Register](#) has been published continuously since 1982.
- [Hot Iron - The Journal of the Constructor's Club](#) is a delightful quarterly newsletter.
- Other Substack Amateur Radio newsletters recommended by Zero Retries.

These YouTube channels regularly feature Zero Retries Interesting content:

- [HB9BLA Wireless](#) by Andreas Spiess HB9BLA
- [KM6LYW Radio](#) by Craig Lamparter KM6LYW (home of the [DigiPi project](#))
- [Modern Ham](#) by Billy Penley KN4MKB
- [Tech Minds](#) by Matthew Miller M0DQW

These podcasts regularly feature Zero Retries Interesting content:

- [Store and Forward](#) - a podcast about the past and future of amateur radio, by Kay Savetz K6KJN (curator of the [Digital Library of Amateur Radio and Communications](#)) and Steve Stroh N8GNJ (Editor of Zero Retries).
- [Ham Radio Workbench](#) by George Zafiropoulos KJ6VU (and friends)
- [Foundations of Amateur Radio](#) by Onno Benschop VK6FLAB

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Email issues of Zero Retries are “instrumented” by [Substack](#) to gather basic statistics about opens, clicking links, etc.

More bits from Steve Stroh N8GNJ:

- [SuperPacket blog](#) — *Discussing new generations of Amateur Radio Data Communications - beyond Packet Radio (a precursor to Zero Retries)*
- [N8GNJ blog](#) — *Amateur Radio Station N8GNJ and the mad science experiments at N8GNJ Labs in Bellingham, Washington, USA*

Thanks for reading!

Steve Stroh N8GNJ / WRPS598 (He / Him / His)

These bits were handcrafted (by a mere human, not an Artificial Intelligence bot) in beautiful Bellingham ([The City of Subdued Excitement](#)), Washington, USA, and linked to the Internet via [Starlink Satellite Internet Access](#).

2024-12-20

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Footnotes for this Issue

To see the relevant sentence for the footnote, just click the footnote number.

[1](#)

Since this is a fiction story, I didn't verify each bit of info that ChatGPT provided that I decided to use. In a non-fiction story, I would have verified each answer before using it.

[2](#)

Zero Retries is still an obscure niche, so my few attempts to have ChatGPT write anything for Zero Retries have been laughable failures. Thus Zero Retries remains a 100% human written newsletter - for better or worse.